

THE NEW NETHERLANDS HYDROGRAPHIC VESSELS “ BUYSKES ” AND “ BLOMMENDAL ”

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In the late 1960s it became apparent that the Netherlands Hydrographic Service would have to replace their ageing surveying vessels *Snellius* and *Luymes*, both of which had been designed for work in the former Dutch East Indies. In order to meet modern surveying requirements a different type of vessel had become necessary since there were increasing calls for detailed hydrographic surveys in the North Sea continental shelf area using the automatic data handling equipment then becoming available for the first time. At the same time there was a need for a new long-range ocean-going ship capable of carrying out both hydrographic and oceanographic work in the North Atlantic and Caribbean regions. Owing to restrictions the building of the larger vessel had to be postponed to the mid-1970s, but in February 1971 the contract was finally placed for two small, light and not too costly vessels able to work either independently or in cooperation on the continental shelf of the North Sea in a surveying and wreck investigation role as well as to carry out limited oceanographic and meteorological observations.

The design of the two new ships, expected to remain in service until the end of the century, paid very particular attention to automatic handling of data, and bridge lay-out requirements. The hull design adopted was that of the very successful *Capella* class Netherlands pilot vessels which have fine manoeuvring and sea-keeping abilities. The new survey vessels, however, have a slightly increased beam and a transom stern providing a more spacious working deck aft.

The vessels have diesel-electric propulsion, the three diesel generator sets being rubber mounted to minimize noise and vibration. Elimination of noise and vibration from machinery, engine exhausts, airconditioning and the propeller have been carefully studied, and consequently a very high standard of comfort has been achieved.

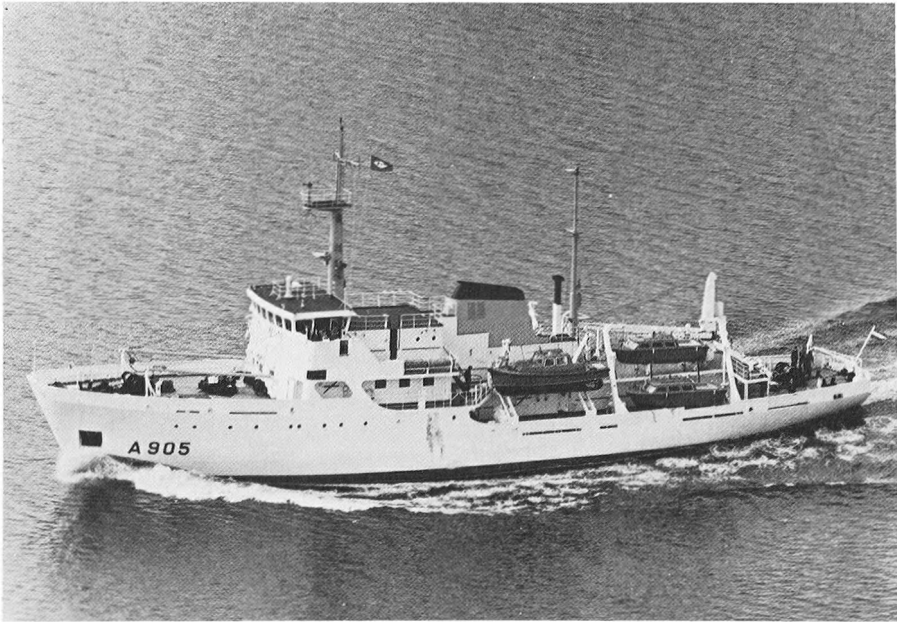


FIG. 1. — H.N.I.M.S. *Blommendal* during her trials.

On account of the risks engendered by working in congested sea areas, the vessels are designed with seven main watertight compartments. Three important watertight doors are hydraulically operated.

Hull construction is in welded steel, with the exception of part of the bridge superstructure which is of an aluminium alloy in order to minimize compass deviation.

The new vessels have more solid ballast than the *Capella* class ships and meet all stability requirements for operations in the North Atlantic, North Sea and Baltic areas. Regions where topside icing occurs must, however, be avoided.

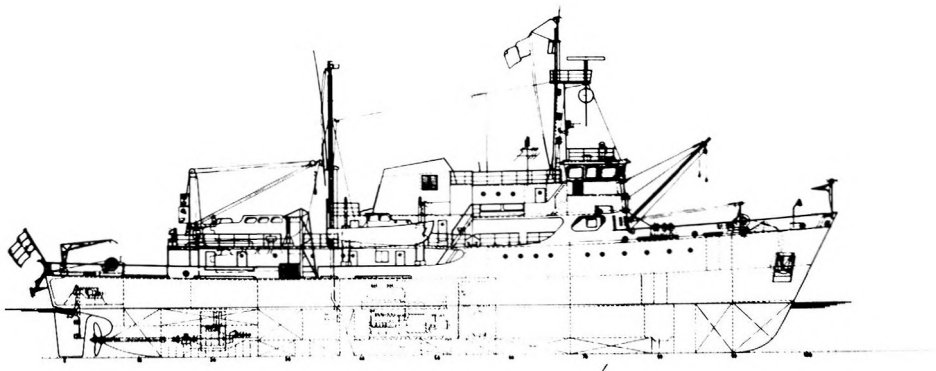


FIG. 2. — Profile.

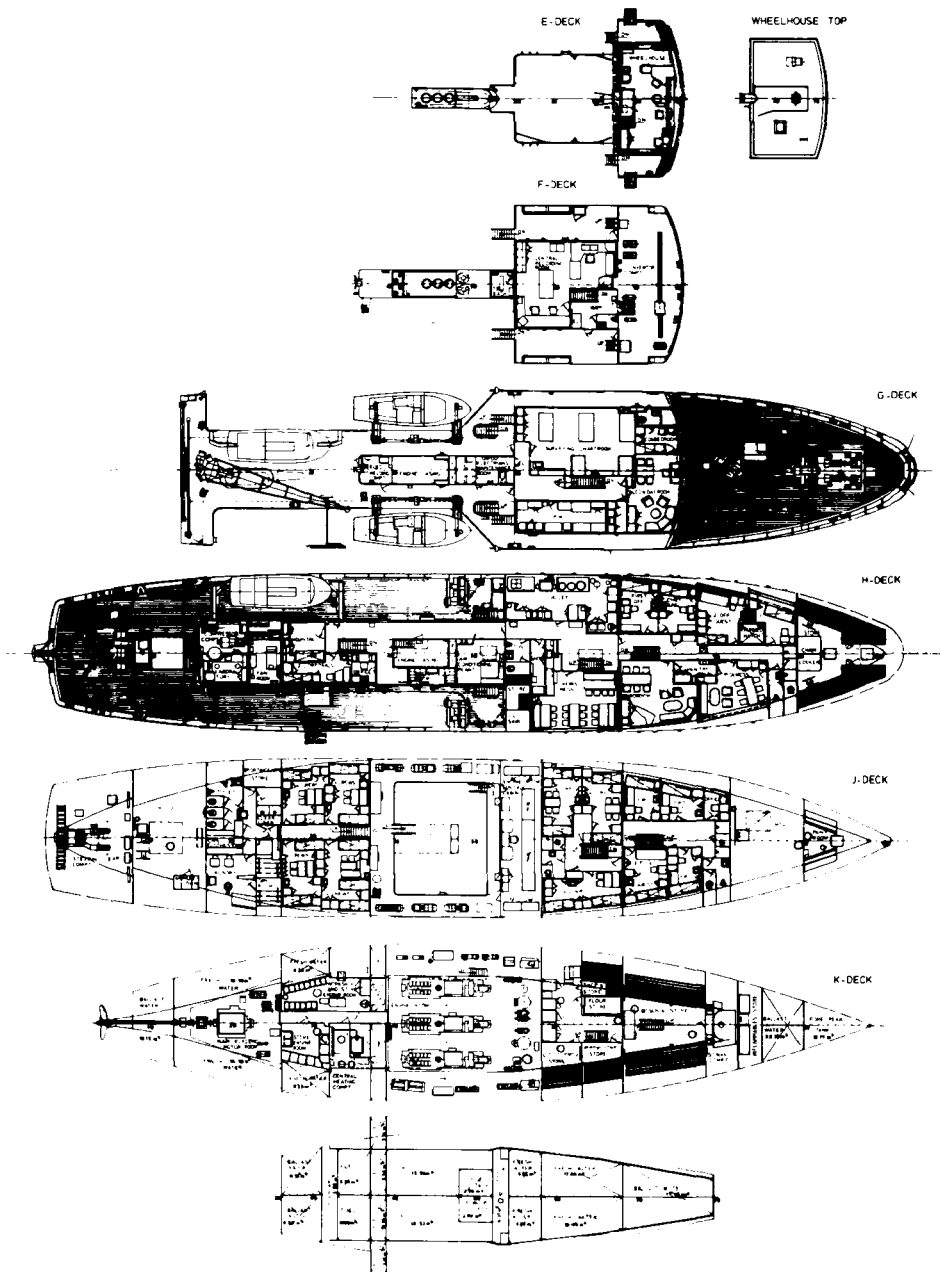


FIG. 3. — General arrangement.

Principal characteristics

Length overall, including stern anchor . . . 60 m
 Moulded draught to construction water line 3.70 m
 Moulded beam 11.10 m

Displacement fully loaded, without water	
ballast	1 037 metric tons
Gross tonnage	914.20 BRT
Net tonnage	211.62 NRT
Propulsion	Single screw, diesel electric
Main diesel engines	3 Paxman, type 12 RPHCZ giving 700 HP at 1200 rev/min.
Service speed	13 knots
Endurance	3 000 miles at 11.5 knots
Accommodation	6 officers, 37 ratings, 2 guests

The electro-hydraulic steering gear is of rotary vane type giving rudder angles of $2 \times 30^\circ$ with the steering wheel or $2 \times 60^\circ$ if operated by push button, allowing rudder movements of 30° starboard to 30° port to be completed within 10 seconds. At maximum speed the turning circle is about twice the ship's length.

Modern materials and fittings are used throughout the living accommodation where laminated plastic surfaces will reduce maintenance. A high standard of comfort is maintained in the living quarters which are fully air-conditioned; there is a cafeteria system for crew messing. The working spaces are also air-conditioned.

Departing from the previous Dutch practice of controlling all sounding from the bridge, the ships have the recorders, computer and plotter grouped round the duty surveyor in the Central Recording Room on F deck. The Surveying Chartroom, equipped with three draughting tables and several chart lockers, is on G deck, and there is a small oceanographic laboratory on H deck.

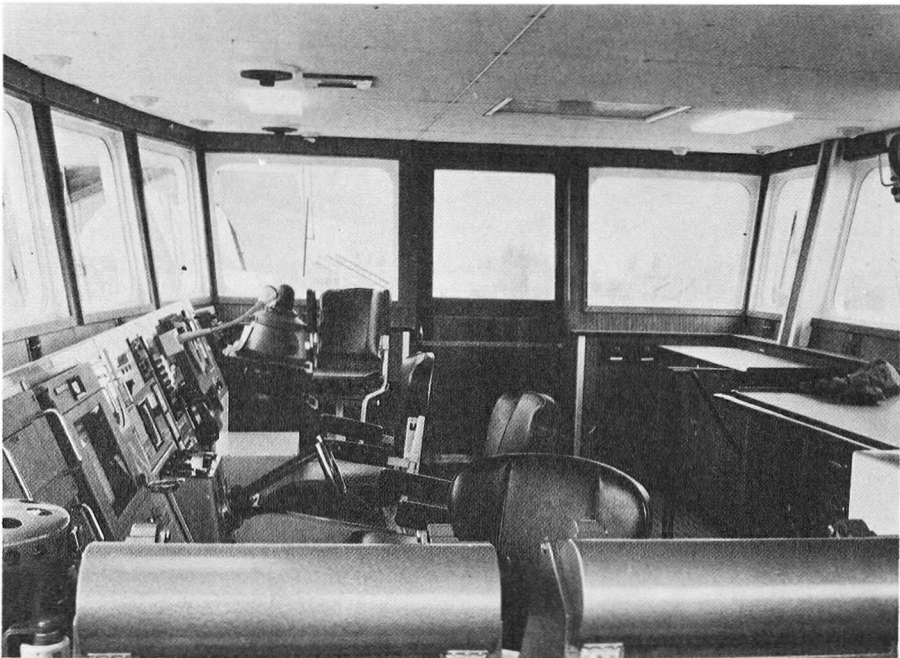


FIG. 4. — The navigating bridge (wheelhouse).

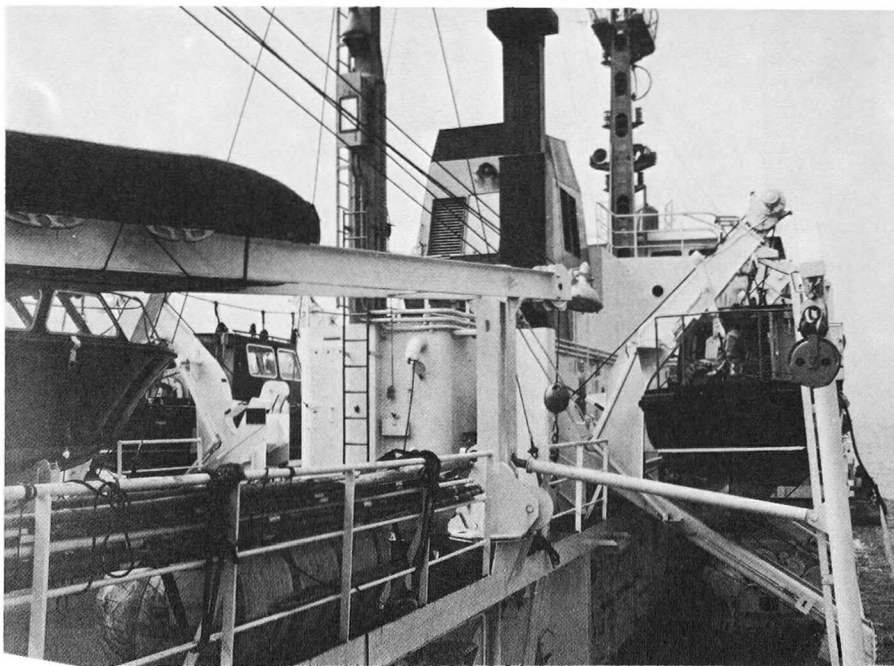


FIG. 5. — On deck; starboard side, looking forward.

The bridge requirements were carefully studied resulting in a design giving an all-round view, where a main console serves three seated operators — officer of the watch, helmsman and hydrographic observer (when present).

Surveying equipment

An Atlas Deso 10 echosounder, 33 and 210 kHz, range 0-280 m is hull-mounted, its recorder being on the bridge with Edig digital reader.

Towed transducers, frequencies 100 and 210 kHz, range 0-100 m will be fitted into minesweeping diverters running steadily at 100 m either side of the ship's track. Their recorders are located in the central Recording Room.

A retractable Elac "Mittellodar" fishery sonar with range scales 2 000 and 4 000 m is used for wreck detection.

A Kelvin Hughes MS 47 transit sonar is installed as a side scanning sonar, the transducers being moved into the operating position by controls located on the bridge.

The sonar recesses can be closed by divers for inspection and maintenance work.

The position fixing equipment includes Decca Navigator Mk 21 and either Decca Hi-Fix or Sea-Fix. Navigational equipment comprises Decca

Radar Transar 629, an Arma Brown gyro compass, a Plath automatic pilot, an electro-magnetic log, and centrally controlled Ericson clocks.

Each vessel has two fast polyester survey launches built in Denmark, equipped with an echosounder (30 and 210 kHz), Decca Mk 21, Hi-Fix or Sea-Fix, and a data logger. Two renovated teak-hulled workboats on constant tension davits are provided for general duties, handling hydrophone cables or explosives, or for wire drag work.

The deck equipment includes a 3-ton Schat crane. A stern anchor with 200 m of 22 mm steel wire is provided to hold the ship on station while sampling or measuring tidal currents. The anchor winch can also be used for recovering the cable of bottom tide gauges.

There is an outboard platform for oceanographic work; also an L-frame and an oceanographic winch for 400 m of 4 or 6 mm steel wire.

An important feature of the new vessels is their HYDRAUT automatic data logging system, also installed in the survey launches. This system is described in an article included in the present issue of the *International Hydrographic Review*.

(Manuscript submitted in English)